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HISTORY AND SIGNIFICANCE OF AMERICAN WILDLIFE: II 1/

Trends from Exploitation to Restoration

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Wildlife Needs Ignored During Development Period

From the time when the first activities by white men toward the colonization and settlement of the wild lands of North America were first undertaken, the greatest efforts and the best intelligence of the increasing population have been directed toward solving those problems that concern man in his relations to his fellows. Americans have displayed vision and ability to anticipate the needs and stresses of the future most convincingly in their development and application of social and political principles. They have created a form of government in conformity with their convictions of liberty and equality among men that has been of sufficient strength to maintain the country's position among other nations of the world, but in accomplishing these things another relationship of fundamental importance was for a long time ignored. For centuries America sent few ambassadors to Nature, within whose realms lie the nation's most profound interests and responsibilities. Laws have been made, institutions raised, universities established, and long wars fought to preserve

1/ Note: This is the second of a series prepared especially for use in schools, to present facts in the development of various phases of wildlife conservation and restoration; the first (Leaflet BS-108 in this series) discussed the era of wildlife exploitation.

the doctrine of human rights, while all around us and beneath our feet the essence of human and all other life as well has flowed away unchecked, the wasting of a vital natural resource nearly unnoticed.

In its disregard of the fact that the natural resources of any land are not inexhaustible, the American civilization has shown no greater degree of unwisdom than has been exhibited since the dawn of history by every race or nation whose destiny it has been to discover new lands and to occupy them. The histories of the continents that mankind has discovered during the ages since the first nomadic tribes emerged from central Asia may all alike be written under the same three chapter titles--Exploration, Exploitation, and Exhaustion. It would seem that as man's intelligence developed and as greater knowledge came to him, his treatment of the soil and its products--organic and inorganic--would grow less and less wasteful and destructive as the vital nature of his dependence upon these things became more and more apparent.

Actually the opposite thing has occurred. Man has used his intelligence and growing ingenuity in ways to hasten the destruction of natural resources and to reduce the interval of time elapsing between the exploration of new fertile territory and the exhaustion of the greater part of its natural wealth. The ravage of Asia was a slow process, one that required thousands of years to accomplish with the crude implements that early man had been able to invent. In less than four and a half centuries since Columbus made the discovery that introduced the most profligate era the world will ever know, the most fertile part of the continent of North America has been reduced to a condition so nearly comparable with the Asiatic scene as to be appalling.

An astute European who visited our country at a time when the carnival of destruction was well under way remarked that Americans regarded trees as enemies and felt that they did well to cut them down. They had the same hostile attitude toward streams and natural reservoirs of water; toward the tough-rooted grasses that clogged the plow; and toward every wild creature inhabiting the prolific region. It was as if the race, impatient of the slow processes of evolutionary doom, seized upon every device and contrivance that could be used to hasten the end. In some phases of modern warfare "scorched earth" is now a recognized weapon for the destruction of an enemy. Its strategy requires the destruction of every living thing upon the land and even the organic resources of the soil itself. For three centuries Americans have been employing the scorched-earth strategy, not against a hostile power, but most effectively against themselves and their institutions.

Awakening to the Menace to the Resource

A study of the history of the conservation of organic resources, including wildlife in France, Germany, and the British Isles, furnishes ground for encouragement to conservationists in this country. Here we find indications that at some stage in the process of land utilization the inhabitants of these older countries became aware of the dangers of

uncontrolled exploitation and were able to enforce corrective measures in time to ward off complete disaster. In all these countries the problem of water pollution has largely been solved and the natural reservoirs of water have been augmented by artificial works. The technique of soil conservation is at an advanced stage, and while the preservation of forests and wildlife has been effectively secured, in some instances it has been accomplished by the use of methods that would be repugnant to the average American.

There is good reason to conclude that American civilization has at last progressed to the point where the essential values of these organic resources is being recognized. Conservation agencies are now asked to develop programs to insure for the future the orderly use and protection of these things.

Perhaps the most important of the belated developments is recognition of the fact that all activities concerned with the improvement or replenishment of organic resources are related and must be completely coordinated if any one is to be successful. No wildlife conservation project, even of small scale, can be ultimately successful unless it includes the technique of soil, cover, and water conservation. Moreover, agriculture, forestry, and the conservation of water resources are materially enhanced by the use of methods beneficial to wildlife.

Planning for Wildlife Restoration

In planning the national wildlife-restoration program there are three requisites to be recognized. The first of these is for land to be set aside upon what may be called the hereditary wildlife ranges for the preservation of all native species. From these reserves the seed stock may be drawn whenever it is necessary or desirable to restock denuded areas. Extensive surveys of game and other kinds of wildlife provide the information to indicate the regions where these reserves should be established with the greatest prospect of success. Provision must be made to insure against the total loss of any species through disease or through some other natural disaster that may conceivably eliminate all the seed stock on a single preserve. For example, bison must be maintained on several widely separated ranges, and similar precautions will have to be taken by the nation with respect to other species. It is anticipated that seed stock from these Federal reserves may be needed to carry out State and Federal restoration programs in the future on areas made available under improved land-utilization programs.

The second requisite of the program is to provide for the continuation of research work to accumulate factual information applicable to current problems, and also to enable wildlife administrators to anticipate future needs. Wildlife as a resource is subjected to constantly varying conditions occasioned by many physical influences. These may be of natural origin or may result from engineering, industrial, or agricultural operations. Programs must be so planned as to furnish facts to enable wildlife agencies to obtain the most favorable results from

current developments. The Biological Survey is setting up stations for regional wildlife research in selected land-grant colleges throughout the United States. Eleven of these already have been established, and four more are needed if the project is to be fully adequate.

By fulfilling the second requisite the third will also be met--that of providing for a carefully trained personnel to administer the wildlife resources of America in the future. **There is now a serious lack** of men who are qualified **for** this work. The land-grant college units will serve as research stations, and they will also offer to graduate students courses in wildlife management similar in purpose to those offered in forestry.

The main objective of the wildlife-restoration program now being developed is to prevent, if possible, the extermination of any valuable species of wild birds and other animals, and to increase their numbers to the greatest extent consistent with the land-use requirements of the human population. Wildlife has a very great economic value, and it also furnishes a means for recreation and relaxation that may well become of even greater importance than are its financial values to human beings subjected to the increasing strains and stresses of modern ways of living and working.

Several valuable and interesting species were allowed to become extinct in the years before there was any general conception of the need for a carefully worked out wildlife-conservation program that could be coordinated with agricultural and industrial activities. It is bad logic to argue that because there is no realization of a loss no loss has been suffered. The present generation of Americans never knew, nor can any ever know, the passenger pigeon and the heath hen, but it is a certainty that modern life is the poorer for the extermination of these birds. Then, too, there is always the active possibility that the extermination of any native creature may cause grave disturbances in the complicated ecological system of a country. Evidences of such damage and a realization of its significance may not appear for many years following the disaster.

Fact-finding Basis for Plans

Such in brief is the philosophy underlying the recent restoration activities and plans in the United States. Actually these plans have been developed over a period of more than 50 years of research and study by technicians on the staff of the Biological Survey. Facts slowly accumulated throughout the period have been brought together, like the sections of an aerial landscape photograph, until a definite, recognizable pattern has appeared. When at last the means to proceed with a program were provided, the essential needs were known as well as the methods by which they could be met.

The principal need was for land. Bird-banding, food-habits, and habitat studies conducted for half a century furnished precise information as to the type of land required to support each of the many different species. It was realized that, except for the habitats of such creatures as find suitable environmental conditions upon cultivated lands, most of the areas that might be

devoted to the restoration program would necessarily be of types not adapted to profitable agricultural uses; or that they would be situated where the results of the soil-conservation and water-control measures necessary for wildlife-management operations would be of great importance to the general land-utilization program.

For the minimum requirements of waterfowl, about 7,500,000 acres of marsh and water refuge areas are needed on the breeding grounds, along the courses of the four major flyways, and on the wintering grounds used by these birds. About half the required total has now been acquired or is in process of acquisition. The areas making up the remainder are already known and can be acquired as means are provided.

To maintain adequate stocks of nonmigratory species in the United States, including big game and upland birds and mammals, 3,968,000 acres have now been obtained by the Biological Survey, and some additional lands are needed. The Nunivak Island Refuge in Alaska includes 1,111,000 acres. The completion of this acquisition and development program will not dispose of the problem, however, since conditions governing land use do not remain stable and immutable. They must change constantly to meet the constantly changing requirements of the people, and provision for the maintenance of wildlife must be sufficiently flexible to allow adjustment.

Development of Wildlife-Protective Legislation

In addition to the regular appropriations made to the Survey for research, game management, and regulatory activities, two acts of Congress now provide moderate but continuing funds for a land utilization and development program. The first of these is the Federal Migratory Bird Hunting Stamp Act of 1934, which annually supplies about two-thirds of a million dollars for land acquisition and use in the waterfowl restoration program. The second, enacted in 1937, is the Federal Aid to Wildlife Restoration Act, authorizing the annual appropriation of amounts equal to the revenues received from the 10-percent tax on arms and ammunition. The revenue from this excise has amounted to about \$3,000,000 annually. Funds appropriated under the Federal-aid measure will be allotted to the States on a cooperative basis whereby each participating State is to pay one-fourth of the total cost of the projects undertaken under the terms of the act. Inasmuch as the act principally requires and specifically encourages the State conservation agencies to use these Federal allotments to acquire and develop land for wildlife purposes, it is apparent that over a period of years many millions of acres of land will be gradually added to the total area now available for wildlife.

The development of land-use policies favorable to wildlife is gradually bringing about an important change in the utilization of wildlife itself. Laws, regulations, and ordinances concerned with the taking of game, fur animals, and fishes constitute a class of legislation that is nearly as old as the history of the white man in America. By such measures the colonists tried to maintain an abundance of wildlife within easy reach of their settlements. Unable as yet to depend entirely upon their

crops and domestic animals for food and clothing, it was important that the settlers be able to supplement their supplies from the adjacent wilderness. They endeavored to conserve conveniently available resources of game and fish by regulating individual use. This form of regulation, however, did not produce the desired results. Game and fur soon became scarce in the vicinities of the settlements, and hunters and trappers were compelled to go farther and farther into the wilderness.

Since that early effort thousands and thousands of similar laws have been enacted and many millions of dollars have been spent in attempts to prevent the individual from taking more than specified quantities of game, fishes, and fur from the common supplies. It has been only in recent years that results have been even partially satisfactory or have seemed to justify the trouble and expense involved. Many thoughtful and informed conservationists reached the conclusion that game laws were utterly ineffective to check the decrease of wildlife. The hunters and trappers, the courts, and the public alike regarded such legislation as being of little consequence. Politicians were interested in the game codes only because they gave wildlife a market value in exchange for votes and preference--values that would otherwise have been lacking. Even the individual sportsman found it hard to convince himself that his observance of the laws would be beneficial in perpetuating game birds and mammals.

Attitude Favorable to Restoration as Government Function

Within the past few years a change has taken place in the American attitude toward legislation designed to regulate the use of game and other wildlife, and a new and more wholesome sentiment is rapidly developing. The reasons are many, and some of them are obscure, but among the most important has been the general realization by the States of the great value of their resources of fish and game, accompanied by a determination to remove wildlife administration from the danger of political interference. Another reason for the growth of new confidence is that in many parts of the country it has been demonstrated that laws controlling the utilization of wildlife need not be ineffective; that they are, in fact, indispensable in programs for the restoration and maintenance of this great resource. Wherever game animals have been established in suitable environment and the kill has been regulated so as to be somewhat less than the rate of production, the species has invariably increased.

In the past, and even at the present time, the major part of laws and regulations to control utilization of wildlife is of a sort that attempts to restrain the individual from taking more than a specified number of birds or mammals in a day, or a week, or during an entire open shooting season. These laws prohibit the use of certain weapons and devices; they prescribe certain hours each day when the taking of game is permitted; and in many other ways they work to reduce the kill by limiting the activities of the individual hunter or trapper. The principle is quite similar to a system of physical handicapping, and like such a system it is not invariably equitable or satisfactory.

There is now a noticeable tendency to modify the principle of conservation laws. Administrators have discovered that if adequate areas are set aside and managed as wildlife reservoirs they will produce surplus stocks of game, which move outward from the protected lands to occupy adjacent regions. Such surpluses on open areas may be safely used without reducing the annual supply from the productive sancturary zones. The closed-area system of game protection greatly reduces law-enforcement problems. It is much easier to prevent all shooting or trapping on a number of sanctuaries than it is to maintain supervision over the personal activities of a large number of gunners in such way as to compel each of them to obey every requirement of a complex code. The decision to extend the open season on waterfowl from 30 days to 45 days in 1938 was based partly upon evidence of an increasing number of birds and partly upon the realization that there are now about 136 Federally owned waterfowl sanctuaries established at strategic points throughout the country to give security against the dangers of overshooting.

It is not at all likely that this new method to govern utilization of game birds and fur and other animals by means of closed or sanctuary zones will replace the established type of restricted seasons and bag limits as prescribed by game and fur laws, but it should eventually permit simplification of these codes and the repeal of many of the so-called nuisance regulations.

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